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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, PATRICK J

ART UNIT PAPER NUMBER

2878

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,494

Applicant(s)

MOULI, CHANDRA

Examiner

Patrick J. Lee

Art Unit

2878

pm

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0805.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment filed August 17th, 2005.

Drawings

2. The drawings were received on August 17th, 2005. These drawings are acceptable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62278432 A to Hoshi.

With respect to claim 1, Hoshi discloses a device in which photodetector (4) is located within a substrate plate, with a copper mesh filter (2) located over the photodetector (4). Hoshi does not explicitly disclose the filter passing light of a specific wavelength, but rather discloses passing light of a specific wavelength range. To modify the teachings of Hoshi would have been obvious to one of ordinary skill in the art because such would improve the filtering capabilities of the device.

With respect to claim 2, filter (2) has a range of wavelengths that it allows light to pass.

With respect to claim 3-4, Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claims 5, 8, & 20, filter (2) is made of a copper mesh deposited.

With respect to claims 7-8, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claims 9-11, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 12, the modified Hoshi does not explicitly disclose the apertures passing visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image visible light.

With respect to claims 13-16, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.

With respect to claim 17, Hoshi does not explicitly disclose the apertures passing non-visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image non-visible light.

With respect to claim 18, the modified Hoshi does not explicitly disclose the apertures passing infrared light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image infrared light.

With respect to claim 19, the modified Hoshi does not explicitly disclose the apertures passing near-infrared light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image near-infrared light.

With respect to claim 21-22, the modified Hoshi does not explicitly disclose the use of an additional mesh filter positioned over the first filter, but such would be obvious to one of ordinary skill in the art to increase the filtering capability and sensitivity of the device. Hoshi does not explicitly disclose the filter passing light of a specific wavelength, but rather discloses passing light of a specific wavelength range. To modify the teachings of Hoshi would have been obvious to one of ordinary skill in the art because such would improve the filtering capabilities of the device.

With respect to claim 23, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claim 24, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 25, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 26, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 27-28, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 29, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

With respect to claim 30, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 31, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claims 32-33, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 34, the modified Hoshi disclose the metal filter being formed from a metal layer deposited.

With respect to claim 35-36, the modified Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claim 37, the modified Hoshi discloses a mesh filter that inherently comprises apertures that pass light of a specific wavelength.

With respect to claims 38-40, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claims 41-44, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.

With respect to claim 45, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 46-47, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 48, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

With respect to claim 49, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 50, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claims 51-52, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 53, the modified Hoshi disclose the metal filter being formed from a metal layer deposited.

With respect to claim 54-55, the modified Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claim 56, the modified Hoshi discloses a mesh filter that inherently comprises apertures that pass light of a specific wavelength.

With respect to claims 57-59, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claims 60-63, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.

With respect to claim 64, Hoshi discloses a device in which photodetector (4) is located within a substrate plate, with a copper mesh filter (2) located over the photodetector. Hoshi does not explicitly disclose the filter passing light of a specific wavelength, but rather discloses passing light of a specific wavelength range. To modify the teachings of Hoshi would have been obvious to one of ordinary skill in the art because such would improve the filtering capabilities of the device.

With respect to claim 65, filter (2) has a range of wavelengths that it allows light to pass.

With respect to claims 66, & 69, filter (2) is made of a copper mesh deposited.

With respect to claims 67-68, the thickness of the metal layer is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art to control the amount of light that the filter passes through.

With respect to claims 70-72, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 73, the modified Hoshi does not explicitly disclose the apertures passing visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image visible light.

With respect to claims 74-77, the size of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 78, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 79-80, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 81, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

Response to Arguments

5. Applicant's arguments filed 8/17/2005 have been fully considered but they are not persuasive.

Applicant argues that since radio waves are being filtered out in the Hoshi patent, this fact distinguishes from the claimed invention. However, the fact remains that in the

Hoshi patent, the radio waves are still considered to be light and the light receiving element (4) does receive optical radiation.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee
Examiner
Art Unit 2878

PJL
September 16th, 2005


Stephone B. Allen
Primary Examiner